

WHAT IS CLAIMED IS:

1. An image pickup device comprising:

a pair of first and second substrates facing each other with a vacuum space interposed therebetween; and

a plurality of electron-emitting devices provided over said first substrate and a photoconductive layer provided over said second substrate,

said electron-emitting devices each comprising;

an insulating layer deposited over an electron source layer which is formed over an ohmic electrode; and

a metal thin film electrode deposited over said insulating layer, wherein said insulating layer and said metal thin film electrode include an island region as an electron-emitting section in which film thicknesses thereof are gradually reduced toward said electron source layer.

2. An image pickup device as claimed in claim 1 wherein said insulating layer is made of a dielectric material and has a film thickness of 50 nm or greater in an area other than said island region.

3. An image pickup device as claimed in claim 1 wherein said metal thin film electrode terminates over said insulating layer within said island region.

4. An image pickup device as claimed in claim 1 wherein

said insulating layer terminates over said electron source layer within said island region.

5. An image pickup device as claimed in claim 1 wherein said island region is a recess on a flat surface of said metal thin film electrode.

6. An image pickup device as claimed in claim 1 wherein said insulating layer and said metal thin film electrode are deposited by one of a physical deposition method and a chemical deposition method.

7. An image pickup device as claimed in claim 1 wherein bus lines are formed over a plurality of said metal thin film electrodes, said ohmic electrodes and said bus lines being stripe-shaped electrodes arranged in directions orthogonal to each other.

8. An image pickup device as claimed in claim 1, the device further comprises a reverse-tapered block within each of said island regions.